

Using this kind of differential manometer one can determine the pressure drop to 0.025 mm Hg, at practically any pressure level.

Measurement of the volume change of the volumeter was carried out to an accuracy of $\pm 0.005 \text{ cm}^3$. The volume of liquid supplied to the system was measured to the same accuracy. Reading of the displacement of the pistons of the dosimeter and of the volumeter was done using a height gauge.

The Experimental Procedure

The course of the test may be examined according to the scheme of the equipment shown in Fig. 1.

To fill the equipment with gas, we use the piston motors to bring the volumeter piston to the extreme low position, and the dosimeter piston to the extreme up position. We separate the dosimeter from the mixer by valve 1. We open valve 2 and evacuate the dosimeter with a vacuum pump, after which the liquid is admitted to it, and valve 2 is closed. To fill the equipment with gas, we open valves 3, 4, and 5 and close valve 6. We fill the equipment with gas to the test pressure, and then wait, to allow the system to take up the temperature of the thermostat. Thereafter we uncouple vessels A and B, by closing valves 4 and 5, and note the null position of the galvanometer needle. We open valve 1. The pressure in the mixer then falls off somewhat since the liquid has not been compressed. Then with the motor we begin to move the dosimeter piston until the galvanometer needle returns to the null position, and therefore the liquid has been compressed to the test pressure.

Pressures up to 1500 atm were measured firstly with the coarse manometer I, and then with the precision Bourdon manometer K, to an accuracy of